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According to a new [technical report](#) prepared for the 2013 National Climate Assessment, the nation's valuable ocean ecosystems and marine resources are already being affected by a changing climate. These impacts are expected to increase in the coming years, putting marine resources - and the people and economies that depend on them - at high risk in a changing world.

The report, [Oceans and Marine Resources in a Changing Climate](#) reviews how climate variability is affecting the physical, chemical, and biological conditions of ocean ecosystems, and how these changes are already having societal impacts by affecting fisheries and other valuable ocean products and services. It also synthesizes information on projected climate-driven changes in U.S. ocean ecosystems over the next 25 to 100 years.

The report is designed to help marine resource managers, communities, and businesses understand, prepare for, and respond to climate impacts on U.S. ocean ecosystems. It details the impacts of climate change and ocean acidification, and then summarizes what is known about how those changes will affect human uses of marine ecosystems. Some of the report's key findings include:

- Because the physiological responses of organisms vary, climate change can have positive, negative, or null effects on species with different tolerances, so that both "winners" and "losers" are likely to emerge

- Species ranges are shifting toward the poles and the rate of this shift is greater for marine organisms than for terrestrial ones
- The societal impacts of climate change are enormous, affecting all sectors pertaining to human uses of the ocean, including fisheries, energy, transportation, security, human health, tourism, and maritime governance. These changes will require reassessment of governance regimes for ocean environments.
- Climate change will demand new international partnerships to ensure that management plans are coordinated for shared marine resources
- Significant gaps remain in our knowledge of climate impacts on ocean ecosystems. We need to better understand the interactions between ocean environmental systems and ocean uses to be able to project and respond to future climate-driven changes

To read the full article on the NOAA website, please [click here](#).

- To download the full-report please [click here](#).
- For an abridged version of the report please [click here](#).
- This report provided technical input for development of the Oceans and Marine Resources chapter of the National Climate Assessment to be released in early 2014. For more information on the Assessment please [click here](#).